WEST Search History

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DATE: Friday, March 03, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ	
☐	L8	ralstonia same L7	2
☐	L7	ralstonia same L3	2
☐	L6	(gene or sequence or polynucleotide or clone or recombinant) same L5	23
☐	L5	(degrad$5 or inactiv$5) same L4	50
☐	L4	(quorum same sensing) or quorum-sensing same L1	312
☐	L3	(degrad$5 or inactiv$5) same L2	5
☐	L2	(gene or sequence or polynucleotide or clone or recombinant) same L1	189
☐	L1	((n-acylhomoserine with lactone with acylase?) or (acylhomoserine with lactone with acylase?) or (AHL with acylase?) or AIIA or QSBA or QSB or (acylhomoserine with lactone with lactonase?)or (AHL with lactonase?))	9635

END OF SEARCH HISTORY

STN SEARCH 10/502,351 03/03/2006
=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 15:06:43 ON 03 MAR 2006

=> s ((n-acylhomoserine(w)lactone(w)acylase#) or (acylhomoserine(w)lactone(w)acylase#) or (AHL(w)acylase#) or AIIA or QSBA or QSB or (acylhomoserine(w)lactone(w)lactonase#) or (AHL(w)Lactonase#))
16 FILE ADISCTI
2 FILE ADISINSIGHT
6 FILE ADISNEWS
11 FILE AGRICOLA
8 FILE BIOENG
92 FILE BIOSIS
5 FILE BIOTECHABS
5 FILE BIOTECHDS
13 FILE BIOTECHNO
18 FILE CABA
103 FILE CAPLUS
3 FILE CEABA-VTB
8 FILE CIN
1 FILE CROPU
1 FILE DDFB
39 FILE DDFU
15 FILE DGENE
1 FILE DISSABS
1 FILE DRUGB
64 FILE DRUGU
1 FILE EMBAL
85 FILE EMBASE
44 FILE ESBIOBASE
41 FILE FEDRIP
53 FILE GENBANK
5 FILE IFIPAT
1 FILE IMSDRUGNEWS
1 FILE IMSRESEARCH
14 FILE JICST-EPLUS
28 FILE LIFESCI
90 FILE MEDLINE
3 FILE NTIS
39 FILE PASCAL
1 FILE PHAR
1 FILE PHARMAML
1 FILE PHIC
5 FILE PHIN
11992 FILE PROMT
82 FILE SCISEARCH
40 FILE TOXCENTER
179 FILE USPATFULL
32 FILE USPAT2
2 FILE WATER
12 FILE WPIDS
12 FILE WPINDEX
4 FILE IPA
1 FILE NAPRALERT
354 FILE NLDB

L1 QUE ((N-ACYLHOMOSERINE(W) LACTONE(W) ACYLASE#) OR (ACYLHOMOSERINE(W) LACTONE(W) ACYLASE#) OR (AHL(W) ACYLASE#) OR AIIA OR QSBA OR QSB OR (ACYLHOMOSERINE(W) LACTONE(W) LACTONASE#) OR (AHL(W) LACTONASE#))

=> d rank
F1 11992 PROMT
F2 354 NLDB
F3 179 USPATFULL
F4 103 CAPLUS
F5 92 BIOSIS

F6 90 MEDLINE
F7 85 EMBASE
F8 82 SCISEARCH
F9 64 DRUGU
F10 53 GENBANK
F11 44 ESBIOBASE
F12 41 FEDRIP
F13 40 TOXCENTER
F14 39 DDFU
F15 39 PASCAL
F16 32 USPAT2
F17 28 LIFESCI
F18 18 CABA
F19 16 ADISCTI
F20 15 DGENE
F21 14 JICST-EPLUS
F22 13 BIOTECHNO
F23 12 WPIDS
F24 12 WPINDEX
F25 11 AGRICOLA

=> file f1-f9, f11-f19

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=> s L1
L2 13299 L1

=> s (gene# or sequence# or polynucleotide# or clone# or recombinant#)(s)L2
6 FILES SEARCHED...
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'OMBINANT#)(S)L12'
14 FILES SEARCHED...
L3 207 (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINANT#
)(S) L2

=> s (degrad? or inactiv?)(s)L3
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'INACTIV?)(S)L30'
L4 103 (DEGRAD? OR INACTIV?)(S) L3

=> s ((quorum(s)sensing) or quorum-sensing)(s)L4
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'QUORUM(S)SENSING'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'M-SENSING)(S)L48'
L5 63 ((QUORUM(S) SENSING) OR QUORUM-SENSING)(S) L4

=> s ralstonia(s)L5
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'RALSTONIA(S)L66'
L6 8 RALSTONIA(S) L5

=> dup rem L6
DUPLICATE IS NOT AVAILABLE IN 'FEDRIP'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L6
L7 5 DUP REM L6 (3 DUPLICATES REMOVED)

=> d ibib abs L7 1-5

L7 ANSWER 1 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:179006 USPATFULL
TITLE: Ralstonia ahl-acylase gene
INVENTOR(S): Zhang, Lian Hui, Singapore, SINGAPORE
Xu, Jin Ling, Singapore, SINGAPORE
Lin, Yi Han, Singapore, SINGAPORE

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005155088	A1	20050714
APPLICATION INFO.:	US 2003-502351	A1	20020123 (10)
	WO 2002-SG11		20020123

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET,
N.W., SUITE 800, WASHINGTON, DC, 20005, US
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1379
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides a ***gene*** , ***qsbA*** , which encodes
a protein useful for ***inactivating*** certain bacterial
quorum - ***sensing*** signal molecules (N-acyl homoserine
lactones) which participate in bacterial virulence and biofilm
differentiation pathways. This ***gene*** was isolated from
Ralstonia sp., strain XJ12B. The invention also provides the
QsbA protein, which possesses N-acyl homoserine lactone
inactivating activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 2 OF 5 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE
ACCESSION NUMBER: 2003256913 ESBIOBASE
TITLE: Utilization of Acyl-Homoserine Lactone Quorum Signals for Growth by a Soil Pseudomonad and Pseudomonas aeruginosa PAO1
AUTHOR: Huang J.J.; Han J.-I.; Zhang L.-H.; Leadbetter J.R.
CORPORATE SOURCE: J.R. Leadbetter, W. M. Keck Laboratories, M/C 138-78, California Institute of Technology, Pasadena, CA 91125, United States.
E-mail: jleadbetter@caltech.edu
SOURCE: Applied and Environmental Microbiology, (2003), 69/10 (5941-5949), 46 reference(s)
CODEN: AEMIDF ISSN: 0099-2240
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Acyl-homoserine lactones (AHLs) are employed by several Proteobacteria as ***quorum*** - ***sensing*** signals. Past studies have established that these compounds are subject to biochemical decay and can be used as growth nutrients. Here we describe the isolation of a soil bacterium, Pseudomonas strain PAI-A, that ***degrades*** 3-oxododecanoyl-homoserine lactone (3OC12HSL) and other long-acyl, but not short-acyl, AHLs as sole energy sources for growth. The small-subunit rRNA ***gene*** from strain PAI-A was 98.4% identical to that of Pseudomonas aeruginosa, but the soil isolate did not produce obvious pigments or AHLs or grow under denitrifying conditions or at 42.degree.C. The ***quorum*** - ***sensing*** bacterium P. aeruginosa, which produces both 3OC12HSL and C4HSL, was examined for the ability to utilize AHLs for growth. It did so with a specificity similar to that of strain PAI-A, i.e., ***degrading*** long-acyl but not short-acyl AHLs. In contrast to the growth observed with strain PAI-A, P. aeruginosa strain PAO1 growth on AHLs commenced only after extremely long lag phases. Liquid-chromatography-atmospheric pressure chemical ionization-mass spectrometry analyses indicate that strain PAO1 ***degrades*** long-acyl AHLs via an ***AHL*** ***acylase*** and a homoserine-generating HSL lactonase. A P. aeruginosa ***gene*** , pvdQ (PA2385), has previously been identified as being a homologue of the ***AHL*** ***acylase*** described as occurring in a ***Ralstonia*** species. Escherichia coli expressing pvdQ catalyzed the rapid ***inactivation*** of long-acyl AHLs and the release of HSL. P. aeruginosa engineered to constitutively express pvdQ did not accumulate its 3OC12HSL ***quorum*** signal when grown in rich media. However, pvdQ knockout mutants of P. aeruginosa were still able to grow by utilizing 3OC12HSL. To our knowledge, this is the first report of the ***degradation*** of AHLs by pseudomonads or other .gamma.-Proteobacteria, of ***AHL*** ***acylase*** activity in a ***quorum*** - ***sensing*** bacterium, of HSL lactonase activity in any bacterium, and of AHL ***degradation*** with specificity only towards AHLs with long side chains.

L7 ANSWER 3 OF 5 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2003:39421 LIFESCI
TITLE: Acyl-homoserine lactone acylase from Ralstonia strain XJ12B represents a novel and potent class of quorum-quenching enzymes
AUTHOR: Lin, Y.; Xu, J.; Hu, J.; Wang, L.; Ong, S.L.; Leadbetter, J.R.; Zhang, L.
CORPORATE SOURCE: Laboratory of Biosignals and Bioengineering, Institute of Molecular and Cell Biology, and Department of Civil Engineering, National University of Singapore, 30 Medical Drive, Singapore 117609.; E-mail: lianhui@imcb.a-star.edu.sg
SOURCE: Molecular Microbiology [Mol. Microbiol.], (20030200) vol. 47, no. 3, pp. 849-860.
ISSN: 0950-382X.
DOCUMENT TYPE: Journal

FILE SEGMENT: J
LANGUAGE: English
SUMMARY LANGUAGE: English
AB N-acylhomoserine lactones (AHLs) are used as signal molecules by many ***quorum*** - ***sensing*** Proteobacteria. Diverse plant and animal pathogens use AHLs to regulate infection and virulence functions. These signals are subject to biological ***inactivation*** by ***AHL*** - ***lactonases*** and ***AHL*** - ***acylases*** . Previously, little was known about the molecular details underlying the latter mechanism. An AHL signal- ***inactivating*** bacterium, identified as a ***Ralstonia*** sp., was isolated from a mixed-species biofilm. The signal ***inactivation*** encoding ***gene*** from this organism, which we call aiiD, was ***cloned*** and successfully expressed in Escherichia coli and ***inactivated*** three AHLs tested. The predicted 794-amino-acid polypeptide was most similar to the aculeacin A acylase (AAC) from Actinoplanes utahensis and also shared significant similarities with cephalosporin acylases and other N-terminal (Ntn) hydrolases. However, the most similar homologues of AiiD are deduced proteins of undemonstrated function from available ***Ralstonia*** , Deinococcus and Pseudomonas genomes. LC-MS analyses demonstrated that AiiD hydrolyses the AHL amide, releasing homoserine lactone and the corresponding fatty acid. Expression of AiiD in Pseudomonas aeruginosa PAO1 quenched ***quorum*** ***sensing*** by this bacterium, decreasing its ability to swarm, produce elastase and pyocyanin and to paralyse nematodes. Thus, ***AHL*** - ***acylases*** have fundamental implications and hold biotechnological promise in quenching ***quorum*** ***sensing*** .

L7 ANSWER 4 OF 5 CABA COPYRIGHT 2006 CABI on STN
ACCESSION NUMBER: 2000:81109 CABA
DOCUMENT NUMBER: 20001005912
TITLE: AiiA, an enzyme that inactivates the acylhomoserine lactone quorum-sensing signal and attenuates the virulence of Erwinia carotovora
AUTHOR: Dong YiHu; Xu JinLing; Li XianZhen; Zhang LianHui; Dong, Y. H.; Xu, J. L.; Li, X. Z.; Zhang, L. H.
CORPORATE SOURCE: Institute of Molecular Agrobiology, 1 Research Link, The National University of Singapore, 117604, Singapore.
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (2000) Vol. 97, No. 7, pp. 3526-3531. 36 ref.
ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 20000719
Last Updated on STN: 20000719
AB N-acylhomoserine lactones, known as autoinducers (Als), are widely conserved signal molecules present in ***quorum*** - ***sensing*** systems of many Gram-negative bacteria. Als are involved in the regulation of diverse biological functions, including expression of pathogenic ***genes*** in the plant pathogens Pseudomonas solanacearum [***Ralstonia*** solanacearum], several Erwinia species, and the human pathogen Pseudomonas aeruginosa. A bacterial isolate, Bacillus sp. 240B1, is capable of enzymatic ***inactivation*** of Als. The ***gene*** (***aiiA***) for Al ***inactivation*** from Bacillus sp. 240B1 has been ***cloned*** and shown to encode a protein of 250 amino acids. ***Sequence*** alignment indicates that ***AiiA*** contains a "HXHXDH" zinc-binding motif that is conserved in several groups of metallohydrolases. Site-directed mutagenesis showed that conserved aspartate and most histidine residues are required for ***AiiA*** activity. Expression of ***aiiA*** in transformed Erwinia carotovora strain SCG1 significantly reduces the release of Al, decreases extracellular pectolytic enzyme activities, and attenuates pathogenicity on potato, eggplant [aubergine], Chinese cabbage, carrot, celery, cauliflower, and tobacco. Our results indicate that the Al-***inactivation*** approach represents a promising strategy for prevention of diseases in which virulence is regulated by Als.

L7 ANSWER 5 OF 5 FEDRIP COPYRIGHT 2006 NTIS on STN

ACCESSION NUMBER: 2006:115324 FEDRIP
NUMBER OF REPORT: AGRIC 0189894
RESEARCH TITLE: ***Degradation*** of Acyl-Homoserine Lacton Signal Molecules by Soil Microbiota AT
STAFF: Principal Investigator: (rate determination) Leadbetter, J. R.
PERFORMING ORGN: CALIFORNIA INST OF TECHNOLOGY, ENVIRONMENTAL SCIENCES AND ENGINEERING, PASADENA, CALIFORNIA, 91109
FUNDING: NRI COMPETITIVE GRANT |c C
FILE SEGMENT: Department of Agriculture

SUM Determine uptake parameters and growth rates of the bacterium Variovorax paradoxus during batch and chemostat cultivation on acyl-homoserine lactones substrates at low, environmentally relevant concentrations. Examine the influence of acyl-homoserine lactone biodegradation on ***quorum*** - ***sensing*** regulated physiology during batch and chemostat co-cultivation of V. paradoxus (a signal ***degrader***) with Pantoea stewartii or Pseudomonas aeruginosa (both signal producers). Bacteria are often cultivated in batch, planktonic cultures on high but environmentally irrelevant concentrations of growth substrates. In these studies, bacteria will be grown in continuous culture at low concentrations of the substrates of interest, acyl-homoserine lactones. As another way to explore this issue, acyl-HSL ***degrader*** will be co-cultured with ***quorum*** ***sensing*** , signal producing strains. From these, the affinity of the bacteria for the substrates can be determined, as well as the growth rate at environmentally realistic substrate concentrations.PR ***quorum*** - ***sensing*** Proteobacteria. These signals are subject to biological ***inactivation*** by ***AHL*** - ***lactonases*** and ***AHL*** - ***acylases*** . Previously, little was known about the molecular details underlying the latter mechanism. A soil bacterium was isolated that ***degrades*** 3-oxododecanoyl-HSL (3OC12HSL) and other long acyl, but not short acyl AHLs as sole energy sources for growth. The SSU rRNA ***gene*** from strain PAI-A was 98.4% identical to that of Pseudomonas aeruginosa, but the soil isolate did not produce obvious pigments or AHLs or grow under denitrifying conditions or at 42C. The ***quorum*** ***sensing*** bacterium P. aeruginosa, which produces both 3OC12HSL and C4HSL, was examined for the ability to utilize AHLs for growth. It did so with similar specificity to str. PAI-A, i.e. ***degrading*** long acyl, but not short acyl AHLs. In contrast to strain PAI-A, P. aeruginosa PAO1 growth on AHLs commenced only after extremely long lag phases. LC/APCI-MS analyses indicate that str. PAO1 ***degrades*** long acyl AHLs via an ***AHL*** ***acylase*** and a homoserine-generating HSL lactonase. A P. aeruginosa ***gene*** , pvdQ (PA2385), has previously been identified as being a homologue of the ***AHL*** ***acylase*** described from a ***Ralstonia*** species. E. coli expressing pvdQ catalyzed the rapid ***inactivation*** of long acyl AHLs and the release of HSL. P. aeruginosa engineered to constitutively express pvdQ did not accumulate its 3OC12HSL ***quorum*** signal when grown in rich media. However, pvdQ knockout mutants of P. aeruginosa were still able to grow utilizing 3OC12HSL. To our knowledge, this is the first report of the ***degradation*** of AHLs by pseudomonads or other gamma-Proteobacteria, of ***AHL*** ***acylase*** activity in a ***quorum*** ***sensing*** bacterium, of HSL lactonase activity in any bacteria, and of AHL ***degradation*** with specificity only towards AHLs with long side chains. The stability of ***quorum*** signals under natural conditions is poorly understood. we have examined whether acyl-homoserine lactones (AHLs), the paradigm class of ***quorum*** signals, are ***degraded*** in soils. When amended to soils in physiologically relevant amounts, 14C-labelled AHL signals were mineralized to 14CO2 rapidly and without lag. Heating or irradiation of soils prior to the addition of radiosubstrate abolished mineralization, whereas addition of a protein synthesis inhibitor had no effect. These results establish that signal ***degrading*** bacteria are active in doing so in the environment, and question the ease in which communications within a bacterial population operate effectively in species-rich soils. Impact: Bacteria can communicate. These communications play a role in governing many microbial processes of agricultural interese, in some cases the cuasation of plant diseases, in others the biocontrolled supression of them. Our research has identified ***genes*** , enzymes, and bacterial

species involved with the ***degradation*** signal molecules mediating these communications. Having an understanding of signal ***degradation*** will us to promote beneficial microbial activities and to supress deleterious ones in the field.PB

=> d his

L1 QUE ((N-ACYLHOMOSERINE(W) LACTONE(W) ACYLASE#) OR (ACYLHOMOSERI

L2 13299 S L1
L3 207 S (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINA
L4 103 S (DEGRAD? OR INACTIV?)(S)L3
L5 63 S ((QUORUM(S)SENSING) OR QUORUM-SENSING)(S)L4
L6 8 S RALSTONIA(S)L5
L7 5 DUP REM L6 (3 DUPLICATES REMOVED)

=> log y